V & VI SEMESTER - COURSE OUTCOMES
SCIENCE

B.Sc., MATHEMATICS

18UMTC51   **REAL ANALYSIS**
Course Outcomes:
On successful completion of the course, the learners will be able to

CO1: demonstrate the understanding of basic concepts of Real analysis. (K2)
CO2: determine whether subsets of a metric space are open, closed, complete, connected   and/or compact.
(K3)
CO3: examine whether a function on a metric space is continuous, discontinuous, or uniformly continuous.   (K4)
CO4: comprehend arguments developing the theory behind real analysis (K2)
CO5: construct mathematical proofs of basic results in real analysis   (K3)

18UMTC52   **MODERN ALGEBRA**
Course Outcome:
On successful completion of the course, the learners will be able to
CO 1: Demonstrate the basic concepts like sets, relations, definition of groups(K1)
CO 2: Explain the concepts of subgroups, cosets, isomorphism, rings (K2)
CO 3: Justify the results like isomorphism in various groups (K5)
CO 4: Apply the important theorems (K3)
CO 5: Examine the properties of various groups (K4)

18UMTC53   **STATISTICS II**
Course Outcomes:
On successful completion of the course, the learners will be able to

CO 1: Remember and understanding of statistics and data analysis (K1, K2)

CO 2: Apply various types of distribution (K3)

CO 3: Analyze statistical techniques to interpret the data. (K4)

CO 4: Evaluate problems on test of significance and probability functions. (K5)

CO 5: Create sampling development and scientific attitude through Statistics. (K6)

18UMTA51   **PROGRAMMING IN C**

Course Outcomes:

On successful completion of the course, the learners will be able to

CO 1: Identify appropriate program concepts. (K1)

CO 2: Explain the concept of programming and pseudo codes (K2)

CO 3: Analyze problems, identify subtasks and implement them as functions/procedures. (K4)

CO 4: Implement variables and looping techniques. (K5)

CO 5: Apply branching statement and iteration techniques to solve application programs. (K3)

18UMTE51 DIFFERENTIAL EQUATIONS

Course Outcomes:

On successful completion of the course, the learners will be able to

CO 1: Identify linear, nonlinear, partial and ordinary differential equations. **(K2)**

CO 2: Apply different methods for solving differential equations. **(K3)**

CO 3: Evaluate ordinary and partial differential equation. **(K5)**

CO 4: Convert different forms into standard forms. **(K4)**

CO 5: Solve different types of differential equations. **(K3)**

18UMTE52 FUZZY SETS

Course Outcomes:

On successful completion of the course, the learners will be able to

CO1: Remember and understand the basic concepts of fuzziness. **(K1, K2)**

CO 2: Prepare concepts in projection and extension of the fuzzy numbers **(K3)**

CO 3: Conclude the properties of fuzzy relations and fuzzy sets **(K4)**

CO 4: Importance of the multi valued logics values and fuzzy logic values **(K5)**

CO 5: Compose applications of fuzzy sets and its logics. **(K6)**

18UMTE53 ASTRONOMY

Course Outcome:

On successful completion of the course, the learners will be able to

CO 1: Remember the daily and long-term motion of planets and others. **(K1)**

CO 2: Apply mathematical concepts in studying space objects. **(K3)**

CO 3: Analyze the concepts of the spherical, horizontal systems. **(K4)**

CO 4: Evaluate the Meridian system. **(K5)**

CO 5: Create the interest about astronomy. **(K6)**

18UMTS51   **LAPLACE TRANSFORMS AND FOURIER SERIES**

Course Outcome:

On successful completion of the course, the learners will be able to

CO1: Learn Laplace transforms and understanding its inverse. **(K1, K2)**

CO2: Apply Laplace Transform to solve ordinary differential equation. **(K3)**

CO3: Solve problems in inverse Laplace transform. **(K3)**

CO4: Examine the Laplace transform in periodic function. **(K4)**

CO5: Evaluate the Fourier series and half range Fourier series. **(K5)**

18UMTC61   **COMPLEX ANALYSIS**

Course Outcome:

On successful completion of the course, the learners will be able to

CO 1: List the basic concepts of analytic function and harmonic functions. **(K1)**

CO 2: Express analytic property, conformal mapping and identify singularities. **(K2, K3)**

CO 3: Examine the basic properties of singularities, convergence of power series.**(K4)**

CO 4: Choose the Cauchy's integral formula or integral theorem. **(K5)**

CO 5: Reduce the complex integration with the help of integral formula.**(K6)**

18UMTC62   **LINEAR ALGEBRA**

Course Outcome:

On successful completion of the course, the learners will be able to

CO1: Exhibit vector space, inner product space, span of a set and understand the fundamental theorem of homomorphism (K1, K2)

CO2: Characterize vector spaces and matrices. (K3)

CO3: Apply properties of matrices and vector space (K3)

CO4: Analyze orthogonality and bilinear forms (K4)

CO5: Reduce quadratic form into diagonal form. (K6)

18UMTPR1   **PROJECT & VIVA-VOCE**

18UMTA61   **OPERATIONS RESEARCH**

Course Outcome:

On successful completion of the course, the learners will be able to

CO1: **Illustrate linear problem, special forms and game theory. (K2)**

CO2: Evaluate game theory and linear problems. (K5)

CO3: Compare different types of methods in solving linear problem. (K4)

CO4: Solve linear programming problem. (K3)

CO5: Design real life problem into a linear problem. (K6)

18UMTE61   **GRAPH THEORY**

Course Outcomes

On successful completion of the course, the learners will be able to

CO1: Demonstrate the basic concepts of graph theory. (K2)

CO2: Develop mathematical proofs in graph theory. (K3)

CO3: Examine types of graph and finding its index. (K4)

CO4: Present various graph models. (K5)

CO5: Build mathematical models using graph theory. (K6)

18UMTE62   **STOCHASTIC PROCESS**

Course Outcomes:

On successful completion of the course, the learners will be able to

CO1: List the definition of Markov chain and random walk.(K2)

CO2: Illustrate Stochastic Process, Markov Process. (K3)

CO3: Evaluate the transition probability matrices. (K4)

CO4: Justify the type of Markov Chain. (K5)

CO5: Model the concepts and theorems for real life problems (K6)

18UMTE63   **NUMBER THEORY**

Course Outcomes:

On successful completion of the course, the learners will be able to

CO1: Explain the basic concepts of numbers (K2)

CO2: Solve congruence and number problems. (K3)

CO3: Apply theoretical concepts in number theory (K3)

CO4: Examine the divisibility using several methods (K4)

CO5: construct mathematical proofs of basic results in number theory (K3)

18UMTS61   **Programming in C++**

Course Outcomes:

At the end of the course the students can able to

CO1: Demonstrate how C++ improves C with object-oriented features. **(K2)**

CO2: Write inline functions for efficiency and performance. **(K3)**

CO3: Make use of constructors and member functions. **(K3)**

CO4: Differentiate Overload functions and operators in C++. **(K4)**

CO5: Design C++ classes for code reuse. **(K5)**